DOCUMENT RESUME

ED 313 371 SP 031 770

AUTHOR Moore, Blaine H.; Harris, Bruce R.
TITLE An Assessment of Prospective Teachers' Cognitive Knowledge of Appropriate Instructional Strategies for Teaching Letter Sounds to First Grade Children.
PUB DATE Oct 86
NOTE 23p.; Paper presented at the Annual Convention of the Northern Rocky Mountain Educational Research Association (Missoula, MT, (October, 1986).
PUB TYPE Speeches/Conference Papers (150) -- Reports - Research/Technical (143)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Beginning Reading; Expository Writing; *Grade 1; Higher Education; Instructional Improvement; *Phonics; Preservice Teacher Education; Primary Education; Questionnaires; *Reading Instruction; *Teaching Methods
IDENTIFIERS *Brigham Young University UT

ABSTRACT

This study sought to determine whether prospective teachers at Utah's Brigham Young University (BYU) could articulate in writing appropriate instructional strategies for teaching the letter sounds to beginning readers in the first grade. The study was designed to be the first in a series of studies to find out if Elementary Education students are learning appropriate instructional strategies for teaching phonics. The assumption is made in the study that if a student has a cognitive knowledge of appropriate methods and can articulate that knowledge on paper, there is a high degree of probability the student will be able to implement these strategies in the classroom. A random sample of 26 students responded to a questionnaire developed to assess what teaching strategies a student would use to teach the letter sounds. Since the implicit and explicit approaches to instruction are accepted as the two major ways for teaching phonics, the students were asked to list appropriate teaching strategies for the approach they were taught. Results indicated that the students did not demonstrate the ability to articulate in writing an appropriate knowledge of teaching the letter sounds to their pupils. A copy of the questionnaire is appended. (JD)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED313871

An Assessment of Prospective Teachers' Cognitive Knowledge of Appropriate Instructional Strategies for Teaching Letter Sounds to First Grade Children

Blaine H. Moore
Bruce R. Harris
Brigham Young University

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

B. Harris

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☐ This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

A paper presented at the Annual Convention of the Northern Rocky Mountain Educational Research Association
Missoula, Montana, October 1986

SP031770

BEST COPY AVAILABLE

An Assessment of Prospective Teachers' Cognitive Knowledge of Appropriate Instructional Strategies for Teaching Letter Sounds to First Grade Children

Currently most educators in the United States would agree that phonics instruction (instruction which gives children the power to break the language code) is a critical component of effective reading instruction (Anderson, Hiebert, Scott, & Wilkinson, 1985). Recently the U. S. Secretary of Education issued a report in which he summarized the research literature concerning what works in teaching and learning (Bennett, 1986). In the report, Bennett stated that children get a better start in reading if they are taught phonics. Chall's (1983) research was influential in guiding the academic community to conclude that phonics instruction was superior to non-phonics instruction.

If phonics is a critical component in effective reading instruction, it follows that prospective teachers should learn appropriate instructional strategies for teaching phonics. An important question for those who are responsible for or involved with student teaching programs is the following, "Are prospective teachers learning appropriate instructional strategies for teaching phonics?" Even though prospective teachers may be committed to teaching phonics, their knowledge of and ability to teach phonis may be lacking considerably. Some educators feel that many prospective teachers are not learning appropriate methods for teaching phonics. Phonics instruction includes the following elements which need to be taught to children: the letter sounds associations, blending, and phonic generalizations.

In view of the fact that teachers need to know how to teach letter sounds to begining readers, the purpose of the present study was to determine whether prospective teachers at Brigham Young University (BYU) could articulate in writing appropriate instructional strategies for teaching the letter sounds to first grade children. The present evaluation was designed to be the first in a series of studies to find out if BYU Elementary Education

students are learning appropriate instructional strategies for teaching phonics. In the present study, we made the assumption that if a student has a cognitive knowledge of appropriate methods and can articulate that knowledge on paper, there is a high degree of probability the student will be able to implement these strategies in the classroom. The constraints and/or limitations of this assumption will be discussed further in the DISCUSSION section of this paper.

What is meant by appropriate instructional strategies? Shulman (1986) states that prospective teachers should be taught appropriate methods for the particular content they are teaching. He feels that a major concern in teacher preparation programs throughout the nation is that subject matter content is taught seperately from teaching methods. This divorce between methods and content causes confusion and ineptitude in students. Shulman further recommends that prospective teachers should be taught appropriate methods for teaching different subjects. For example, teaching math requires the use of different methods than reading instruction.

The results of this evaluation have significant importance not only to the BYU College of Education Administors, but also to other teacher preparation institutions interested in determining whether or not their students are learning general principles and approaches concerning how to teach the letter sounds to children. If the results from this and future studies indicate that prospective teachers are not learning appropriate instructional strategies for teaching phonics, children in the public schools may not be receiving the instruction they need to learn critical phonics skills so necessary to their reading success. Appartently the idea of evaluating prospective teachers when they completed their teacher preparation courses to determine if they learned generally how to teach phonics is rather new and novel. After conducting extensive literature reviews using computer data bases, we didn't find any information related to the idea of evaluating prospective teachers' ability to teach phonics.

METHODS

Sample

The sample consisted of 26 BYU students majoring in Elementary Education. The students in the sample were selected randomly from all those students enrolled in the course Elementary Education (El. Ed.) 370: Practicum in Reading, Math, Social Studies and Science (about 150 students were enrolled). This course completed the final required class students had to take to complete their reading requirement as a part of their teacher education program. All of the students selected for the sample responded to the questionnaire.

Instrument

A questionnaire was developed (see appendix A) to assess what teaching strategies a student would use to teach the letter sounds to first grade children. The questionnaire included open-ended and closed format questions. The instrument went through many revisions until it was at a point of clarity sufficient to be administered. The instrument was designed to allow students to list in detail the teaching strategies they would use to teach letter sounds to first grade children.

Even though most educators would be in concordance that some degree of phonics instruction is important, they would disagree concerning how, when and how much to teach children phonics. The many different philosophies regarding how to teach phonics can be classified into two major approaches - explicit and implicit phonics (Anderson et al., 1985; Leu & Kinzer, 1987). In explicit phonics instruction (also called synthetic), the sounds associated with letters are identified in isolation and then blended together to form words. This approach generally uses a direct method of teaching (Johnson & Baumann, 1984; May, 1986). In implicit phonics (also called analytic), the sound association with a letter is never supposed to be pronounced in isolation. Instead, the teacher teaches the letter sounds to the children only in the context of words. This approach generally uses an inquiry or discovery method of teaching (Mckee, 1966; Dunn, Kowallis, & Stewart, 1983).

This study was not intended to broach or solve the debate concerning which general approach to phonics instruction (explicit vs. implicit) is best, rather, it was designed to find out if students could write appropriate instructional strategies for the approach they were taught during their teacher preparation courses. Since the explicit and implicit approaches are generally accepted as the two major ways for teaching phonics, the questionniare asked the students to list appropriate teaching strategies (a complete and detailed lesson plan) for the approach they were taught in their teacher preparation courses.

The most difficult task of this study was establishing the criteria or standards which defined the specific teaching methods that were considered appropriate for explicit and implicit phonics instruction. In other words, what criteria should we use so that we can answer the question, "how can we identify a successful or an appropriate student response when we see one?" In conducting this evaluation, we tried to follow the guiding principles of Standards for Education Evaluation (1981). In harmony with the advise from the Joint Committee, we identified the audiences involved in or affected by the evlaution and asked them what they considered to be appropriate criteria for teaching the letter sounds using either an explicit or implicit approach.

As the reader may have expected, we received many different sets of criteria from each audience. We expected that there would be some diversification of standards because the issue of how to teach phonics is a very controversial topic among reading educators. The most diversity of criteria was among the Elementary Education professors who specialized in reading instruction. We also found that the criteria established in the literature was varied without conformity. There was no general agreement among the audiences concerning what criteria to use for the evaluation.

Normally an evaluation addresses multiple criteria in making value judgements about the evaluand (the object being evaluated). Because the criteria we receive were so diverse, it was not feasible to judge the merit or worth of the students' responses according to multiple criteria. We noticed as we reviewed the different sets of criteria that some methods

were mentioned more frequently than others. Since the Elementary Education Department Chairman at BYU was the principal stakeholder in the evaluation, we consulted with him in determining the criteria which should be used for either method of phonics instruction, using mainly the most common methods that occured among the different sets of criteria. We supported the criteria we established with references from the literature concerning what instructional activities should be present when teaching a learning outcome such as learning the letter sounds. We recognized that some people will not agree with the following criteria we established for this evaluation.

Gagne & Briggs (1979) and Rosenshine & Stevens (1986) suggests that an effective instructional strategy for teaching a discrimination skill such as associating a letter sound with the letter in an explicit approach (systematic and direct) should include the following instructional strategies: 1) explain the goals of the instructional session and make sure they understand those goals (state objectives), 2) demonstrate or model the performance you want the children to learn, 3) provide frequent opportunites to practice what they have learned, 4) provide feedback to the children concerning their performance, and 5) check to make sure the children are understanding and achieving the instructional objectives (assess mastery).

On the other hand, Dunn et al. (1983) states that when teachers use the implicit approach, they should include the following activities in their lesson plan: 1) provide illustrative examples of the letter sound in the context of four to five different words, 2) direct the students' inquiry by providing the students with an idea of what the examples respresent, 3) allow students to formulate generalizations or statement related to the examples, 4) help the students clarify their generalization by verifying their hypothsis with illustrative examples to see if their generalization holds true, 5) provide frequent opportunites to practice what they have learned, and 6) evalulate students' mastery of the generalization.

Because of the qualitative nature of the questionnaire, we recognize there are internal threats to the validity of the results. For example, students responding the questionnaire may not had been as detailed in their written strategies as they would if they were actually teaching children. In addition, some students may not have understood exactly what we were asking them in the question.

Procedures

Questionnaires were administered to the randomly selected students in each of the El. Ed. 370 courses on the last day of class. Before the students were given the questionnaire, a cover letter was distributed explaining the purpose of the survey, importance of the respondent, description of the questionnaire, endorsement for the study, and appreciation for their support. The students were then given the questionnaires and assured that their anonymity would be preserved. Students were given as much time as they needed to complete the questionnaire. The range of time for completing the questionnaire was from 15 to 30 minutes. Following the collection of the completed questionnaires, the data was summarized and tallied by frequencies.

RESULTS

Of the 26 students surveyed, 9 (35 percent) reported they had been taught both the explicit and implicit methods, 11 (42 percent) reported they had been taught only the implicit approach, 3 (12 percent) reported they had been taught only the explicit approach, and 3 (12 percent) reported they had not been taught either approach.

The responses of the 12 students that listed their teaching strategies for the explicit approach were judged according to the frequency they addressed the established criteria. As we mentioned previously, Gagne & Briggs (1979) and Rosenshine & Stevens (1986) suggests that an effective instructional strategy for teaching a discrimination skill such as associating a letter sound with the letter in an explicit approach (systematic and direct) should include the following instructional strategies: 1) explain the goals of the instructional session and make sure they understand those goals (state objectives), 2) demonstrate or

model the performance you want the children to learn, 3) provide frequent opportunites to practice what they have learned, 4) provide feedback to the children concerning their performance, and 5) check to make sure the children are understanding and achieving the instructional objectives (assess mastery).

The following table summarizes the number of students and corresponding percentage that mentioned the criteria in their teaching strategies for explicit phonics.

Table 1

Students Who Addressed the Criteria in Their Responses for Explicit Phonics

Criteria Components	No.	%
1. Explain Objectives	6	50%
2. Model the Letter Sound	7	58%
3. Provide Practice	6	50%
4. Provide Feedback	0	0%
5. Assess Mastery	0	0%

The responses of the 20 students who reported they had been taught the implicit approach were analyzed and summarized by frequency of how many of the students addressed the criteria. As was mentioned in the METHODS section, Dunn et al. (1983) states that when teachers use the implicit approach, they should include the following activities in their lesson plan: 1) provide illustrative examples of the letter sound in the context of four to five different words, 2) direct the students' inquiry by providing the students with an idea of what the examples respresent, 3) allow students to formulate generalizations or statement related to the examples, 4) help the students clarify their generalization by verifying their

hypothsis with illustrative examples to see if their generalization holds true, 5) provide frequent opportunites to practice what they have learned, and 6) evalulate students' mastery of the generalization.

The following table summarizes the number of students and corresponding percentage that mentioned the criteria in their teaching strategies for implicit phonics.

Table 2

Students Who Addressed the Criteria in Their Responses for Implicit Phonics

Criteria Components	No.	%
1. Illustrative Examples	15	75%
2. Direct Students' Inquiry	5	25%
3. Allow to Formulate Hypotheses	2	10%
4. Clarify Generalizations	0	0%
5. Provide Practice	5	25%
6. Assess Mastery	0	0%

Rosenshine and Stevens (1986) suggests that the teacher should perform the following activities during an instructional session: 1) explain the objectives or goals of instructional session, 2) teach the students what you want them to learn, 3) allow learners to practice the skill, and 4) provide individual feedback to the learners. Each of the students' teaching methods were analyzed to determine if the student addressed all four criteria activities necessary in an instructional session. None of the 26 students addressed all four of the activities listed by Rosenshine and Stevens in their teaching strategies.

Teachers should be aware of an appropriate memory load for children as they are teaching letter sounds. Miller (1956) suggested that the short term memory in adults can process between seven plus or minus two items at once. Simon (1981) is more conservative in suggesting that people can only hold about four chunks (or items) at time in short term memory. Based on the findings of the previous research, the criteria for first grade children, then, should be between three to seven letter sounds introduced in one instructional session. Students were asked on the questionniare how many letter sounds they would introduce at a time in a instructional session. Fifteen of the 26 students (58 percent) said they would teach between three to seven letters in an instructional session.

Another aspect of the questionnaire was designed to find out if students had an appropriate understanding of how long to focus on a particular set of letter sounds. Using the same process to determine the criteria for this question (summarizing the literature and consulting with the Elementary Education Department Chairman), we established the standard that about four days is an appropriate time to focus on teaching a particular set of letter sounds. Seventeen of the 26 students (63 percent) indicated they would spend about four days teaching the set of letter sounds.

Another question in the instrument asked the students if they had read any of the research literature related to teaching letter sounds to begining readers. The Dean of the College of Education at BYU asked specifically for the results concerning this question. Three of the 26 students (12 percent) indicated that they had reviewed the research literature.

DISCUSSION

The degree to which the results of this study can be generalized is limited, due to the small sample size and to the local nature of the data. However, the findings from this data bring to light potential concerns and issues regarding the competency of BYU Elementary Education students in planning and teaching phonics instruction.

The data indicates the students could not articulate well on paper the strategies to teach letter sounds to first grade children. One explanation for these results may be that students are not being taught appropriate instructional strategies by their professors. It is also possible that students are being taught these strategies by their professors, but the students cannot remember the strategies from memory.

The data also shows that some of the students did not have an good understanding of the appropriate memory load and time of focus for first grade children. This lack of knowledge may also be the results of professors not attending to these issues in the classroom.

The data also reveals that the students had not reviewed the literature relative to the teaching of phonics. The results of this part of the evaluation lead to another significant question, "to what extent does the Elementary Education department expect their students to be conversant with the current research literature?"

Even though graduating students may be committed to the teaching of phonics, if they cannot articulate the appropriate teaching strategies for phonics instruction, their ability to effectively plan and teach children how to master phonics is suspect.

The results of this study indicate that Elementary Education students at BYU did not demonstrate an ability to articulate in writing an appropriate knowledge of teaching the letter sounds to first grade children. Even though many of the students addressed some of the necessary components in an effective instructional strategy for teaching letter sounds, none of the students listed all of the four criteria activities established by the research that should be present in an appropriate instructional strategy.

Limitations of the Study

There were some serious limitations and constraints in the study that need to be explained. Some of limitations and assumptions account for different interpretations of the findings.

1. The present study did not attempt to determine the effectiveness of the instructional strategies which were listed by the students. In contrast, we wanted to find out whether or not students mentioned appropriate methods for the task of teaching children letter sounds.
2. Students were asked to complete the questionnaire without using any resourse materials from previous classes. We realized that this was somewhat of a contrived expectation, based on the fact that teachers are allowed to refer and use their resource materials while teaching in the actual classroom. Our purpose in not allowing the students to use resource materials was based on our objective to determine if students seem to have a basic understanding of the major or general methods which are appropriate to use in teaching the letter sounds to children.
3. The ability of a student to articulate a particular strategy may not necessarily imply his ability to teach that strategy, however, logic and experience would tend to counter that statement.
4. The students may not have been given specific steps of a strategy to teach letter sounds. In discussion with faculty members much variance in teaching occured as they instructed students relative to the topic. Some faculty members indicated that principles were given and the students were expected to be able to apply these principles depending upon the instructional needs they faced. While others simply indicated they did not teach specific strategies but discussed processes only.
5. The literature reviewed by the researchers for the purpose of determining criteria for teaching strategies was varied in approaches and no agreement on common elements of a teaching strategy could be found. From common elements found among various literature sources the criteria for evaluating the study was determined. That act alone probably could have indicated the potential variance in the findings of the study.

Implications for further research

Most professional educators would suggest that a student should be able to articulate his knowledge as prelude to implementation with students. Based upon the findings of this study it is known that students have difficulty in stating a strategy on paper to teach letter sound, but their ability to teach this strategy to children is not known. To accurately answer the general evaluation question of these studies, we recognized that student performance must be assessed. Performance evaluation will be the focus of a future study. To validate this study, students need to be asked to state a strategy on paper and then follow through by implementing their strategy with children. The effectiveness of the strategy would be further validated by determining the learning of the children.

REFERENCES

Anderson, R. C., Hiebert, E. H., Scott, J. A., & Wilkinson, I. A. G. (1985). *Becoming a nation of readers: The report of the Commission on Reading* (Contract No. 400-830057). Washington, DC: National Institue of Education, U. S. Dept. of Education.

Bennett, W. J. (1986). What Works: Research about Teaching and Learning. Washington, DC: U. S. Dept. of Education.

Chall, J. S. (1983). *Learning to read: The great debate* (2nd ed.) New York: McGraw-Hill.

Dunn, J. D., Kowallis, T., Stewart, P. W. (1983). *Teaching language arts: Listening, reading, speaking, writing, thinkng*. Minneaapolis, MN: Burgess.

Gagne, R. M., & Briggs, L. J. (1979). *Principles of instructional design*. New York: Holt, Rinehart and Winston.

Johnson, D. D., & Baumann, J. F. (1984). Word identification. In P. D. Pearson (Ed.), *Handbook of reading research* (pp. 583-604). New York: Longman.

Lue, D. J., Jr., & Kinzer, C. K. (1987). *Effective Reading Instruction in the Elementary Grades*. Columbus, Ohio: Merrill Publishing.

McKee, P. (1966). *Reading: A program of Instruction for the Elementary School*. Boston: Houghton Mifflin

Miller, G. A. (1956). The magical number seven plus or minus two: Some limits on our capacity for processing information. *Psychological Review, 63*, 81-97.

Rosenshine, B. & Stevens, R. (1986) Teaching functions. In M. C. Wittrock (Ed.), *Handbook of research on teaching* (pp. 376-391). New York: Macmillan.

Simon, H. A. (1981). Studying Human Intelligence by Creating Artificial Intelligence. *American Scientist, 69*, 300-309.

Shulman, L. S. (1986). Those who understand: Knowledge growth in teaching. *Educational Researcher, 15*(2), 4-14

Standards for Evaluations of Educational Programs, Projects, and Materials. (1981). New York: McGraw-Hill.

APPENDIX A

LETTER SOUNDS QUESTIONNAIRE

1. In your teacher preparation courses here at BYU, have you been taught specific teaching strategies (methodology) for teaching letter sounds **in isolation** vs. teaching letter sounds in the context of words (for an example of teaching in isolation, teaching the sounds of the letters by themselves, like fff for f, sss for s and not as a sound heard in a whole word) to first grade children?

   [ ] Yes (If yes, answer the questions below, then go to question #2)

   [ ] No (If no, go to question #2)

   If yes, in conjunction with what class(es) were you taught these teaching strategies?

   If yes, to what degree of confidence do you feel about using these teaching strategies with a first grade class? Mark an "X" at the point along the continuum which best describes your degree of confidence.

   No Confidence ____ ____ ____ ____ ____ Complete Confidence

   If yes, how would you rate the training you received in your courses at BYU? (Mark an "X" in the most appropiate box)

   [ ] Very Poor [ ] Poor [ ] Fair [ ] Good [ ] Excellent

Letter Sounds

If you responded yes to question #1, please specify in detail the teaching strategies (methodology) you were taught to use for teaching letter sounds **in isolation to first grade children.** (Assume that you are substituting for a regular teacher. The regular teacher has asked you to teach the following set of letter sounds for the letters m, n, f, s, and a. Explain in enough detail that someone else could use your methodolgy to teach this set of letter sounds in isolation.)

Letter Sounds

2. In your teacher preparation courses here at BYU, have you been taught specific teaching strategies (methodology) for teaching letter sounds **in the context of words** (for example, teaching the letter sound b in context of the word bat) to first grade children?

   [ ] Yes (If yes, answer the questions below, then go to question #3)

   [ ] No (If no, go to question #3)

   If yes, in conjunction with what class(es) were you taught these teaching strategies?

   If yes, to what degree of confidence do you feel about using these teaching strategies with a first grade class? Mark an "X" at the point along the continuum which best describes your degree of confidence.

   No Confidence ____ ____ ____ ____ ____ Complete Confidence

   If yes, how would you rate the training you received in your courses at BYU?

   [ ] Very Poor [ ] Poor [ ] Fair [ ] Good [ ] Excellent

Letter Sounds

If you responded yes to question #2, please specify in detail the teaching strategies (methodology) you were taught to use for teaching letter sounds **in the context of words to first grade children.** (Assume that you are substituting for a regular teacher. The regular teacher has asked you to teach the following set of letter sounds for the letters m, n, f, s, and a. Explain in enough detail that someone else could use your methodolgy to teach this set of letter sounds in the context of words.)

Letter Sounds

Assume that you have been assigned to teach reading to a class of 25 first grade children in a local school district.

3. Suppose the principle tells you that you can use any method of your choice for teaching letter sounds to your first grade children. What method would you select for teaching the letter sounds to the children?

   [ ] In isolation

   [ ] In context of words

   [ ] Other method (please specify) _____

   _____

   Please explain why you would choose that particular method.

4. Would you use mnemonics to teach letter sounds in your first grade class? (A Mnemonic is a memory representation of a concrete object or event that acts as a link between the letter and its sound; for example, think of a snake hissing for the sound sss for the letter "s".)

   [ ] Yes

   [ ] No

   Please explain why you would or would not use mnemonics.

Letter Sounds

5. In your teaching methodology for first grade children, at the most, how many letter sounds would you introduce in a unit, lesson, module, etc. before introducing additional letter sounds?

[ ] 1 [ ] 6

[ ] 2 [ ] 7

[ ] 3 [ ] 8

[ ] 4 [ ] 9

[ ] 5 [ ] More than 9

Please explain why.

6. How long would you focus on a particular set of sounds with first grade children before introducing a new set of sounds? Select the best answer from the following choices (circle the best answer):

a. Usually one day

b. Usually about 10 days

c. Usually about 4 days

d. Usually about 14 days

Please explain why?

7. Have you read the research literature concerning teaching letters sounds?

[ ] Yes (if yes, answer the questions below, then tell the interviewer that you are ready to complete question #10)

[ ] No (if no, tell the interviewer that you are ready to complete question #10)

If yes, in conjunction with what class(es) were you exposed to the findings of the research?

If yes, what do you feel was the general consenses of the research literature?

Letter Sounds

8. Produce the sounds of the following letters:

Constants

n _____
l _____
g _____
y _____
f _____
t _____
d _____
j _____
s _____
p _____
h _____
v _____
m _____
c _____
k _____
z _____
r _____
b _____
x _____
w _____

Short vowels

a _____
e _____
i _____
o _____
u _____

Diagraphs and Constant Blends

th _____
sh _____
wh _____
ch _____
ng _____
nk _____
ph _____
qu _____